

EXCAVATIONS AT DIBSI FARAJ, NORTHERN SYRIA, 1972-1974: A PRELIMINARY NOTE ON THE SITE AND ITS MONUMENTS

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with an Appendix by

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SUMMARY

Dibsi Faraj, Roman *Athis*, Late Roman/Early Byzantine *Neocaesarea*, and Early Islamic *Qasrin*, stands in the Euphrates Valley and is to be inundated by the lake of the Euphrates Dam at Tabqa. Excavations have yielded evidence of domestic occupation from the first to the tenth centuries, and of this occupation combined with a military fort created by the addition of a major enceinte of walls in the late third century. The defenses were reconstructed in the sixth century. Other structures excavated were an administrative building of the fourth and sixth centuries, public baths of the fourth and fifth/sixth centuries, a large basilica of A.D. 345/46 (?), and an extramural martyrium of A.D. 428/29. Detailed notice of the stratigraphy and materials recovered is reserved to the final report of the excavation which is now in preparation.

CIRCUMSTANCES OF THE EXCAVATION

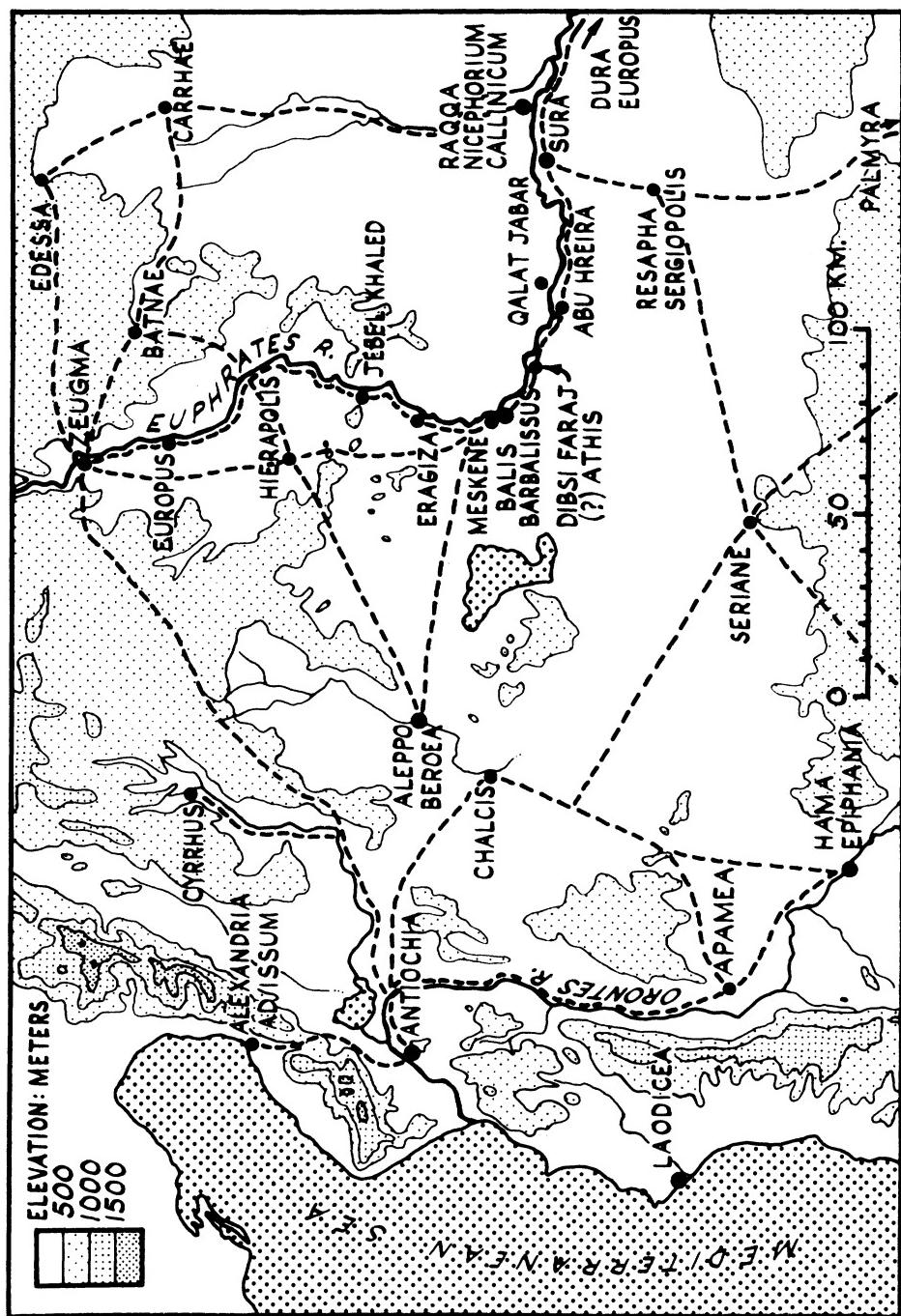
At the invitation of the Department of Antiquities of Syria a survey team from the Dumbarton Oaks Center for Byzantine Studies and the Kelsey Museum, University of Michigan, Ann Arbor, led by Professors Cyril Mango and George Mendenhall, visited the Euphrates valley in 1971. This team selected Dibsi Faraj for excavation as having the best potential to interest both institutions and as being of such size that a significant elucidation of its history and monuments might be made in the three years remaining before the area became fully flooded. In November 1971 a brief exploratory excavation was carried out on behalf of the Department of Antiquities by Mr. Qassem Toueir. The writer was invited in February 1972 to direct the Dumbarton Oaks and Kelsey

Museum joint excavations. The Department of Antiquities of the Republic of Syria has throughout facilitated the formal arrangements while Dumbarton Oaks shouldered the major burden of finance so that two seasons of excavations could be carried on in 1972, two more in 1973, and a smaller fifth season on the citadel basilica in 1974.¹

HISTORICAL GEOGRAPHY

Dibsi Faraj occupies a limestone outlier at the east end of the Dibsi plateau on the south bank of the Euphrates seventeen kilometers east of Barbalissus-Balis (fig. A). This site combines a defensible plateau promontory

¹ Thanks for making the excavation possible are due not only to the sponsors and to the Syrian Department of Antiquities and its representatives with the excavations from the Palmyra Museum, Tadmor, and the National Museum, Aleppo, but also especially to the members of the excavation team. Site supervisors were Sara Bishop (4 seasons), David Callahan, John Dobbins (3), Charlene Hogsten, Denis Hoppe (3), John Lundquist, Neil MacKenzie, Priscilla Soucek, Colin Stillwell, Susan Stillwell, Margaret Vowles, Brian Williams, and David Williams. The architect throughout was Richard Anderson, assisted by Vivien Vibert Anderson. Richard Anderson was also responsible for the kite photographs, using his Anderson Aero camera flown from a Jalbert aerofoil 45-sq.-ft. kite. Tony Wilkinson (3) acted as consultant soil scientist. In the excavation house Yvonne Harper supervised recording and conservation of materials and general administration; archaeological conservators were Sonia Abbink-Spink, Janet Cronyn, Margaret Milford Howell, Elizabeth Sanford (2), James Spriggs, and Helen Ward; draughting of small finds was done by Candace Howes, Nicholas Moore, Stuart Munro-Hay (2), Sarah Ravilious, and Rose Verney; finds assistants were Sheila Childs, Heather Gibson, Prudence Grice, Sabrina Hibbert, Judy O'Neill (3), Marion Phillips, and Elizabeth Savage.



A. Location Plan of Dibsi Faraj within Northern Syria

position with control of and access to a seasonal grazing steppe and a fertile riverine flood plain. A preliminary report analyzing the physical environment of Dibsi Faraj (fig. F) is presented below in an appendix by Tony Wilkinson. Here it suffices to say that stratigraphic excavation has shown that the natural advantages of the site were recognized and settlement commenced on a limited scale at about the beginning of the first century A.D.

The site of Dibsi Faraj is relatively well known to scholarship, but epigraphic testimony to its ancient name is still lacking. The majority view among scholars is that Dibsi Faraj, known until fairly recently as Qseyr el-Dibsi, was the Roman Athis.² There are three ancient sources on which this view depends. The *Geography* of Ptolemy (V. xv. 17) gives Athis in Chalybonitis as the only site between Barbalissus and Sura. The *Peutinger Table* (segment XI.2), though badly distorted in this region of the Euphrates Valley, shows the road from Palmyra by Resapha to Sura continuing by an unnamed site, corrupt distances, and a gap, to "Attas," twelve miles from "Barbalisso." The Ravenna Cosmography (88.13) lists after "Barbalission" "Anthis" and adds "Sephe" and "Adiazane" before "Suri." Sephe was the Roman phase of the site below Abu Hreira known in the Early Islamic period as *Siffin*. Adiazane may be near Safsafa. Each of these places has recently yielded a Latin inscription. Abu Hreira was the find spot of the tombstone of a veteran of *Ala III Thracum*, Safsafa the alleged findspot of an important *vale-tudinarium* building inscription of *Cohors IV (Callaecorum) Lucensium*.

The minority view, summarized for example by Chapot or Honigmann, would locate Thapsacus at Dibsi Faraj.³ It is based on an interpretation of Pliny (*NH*, V.xxi) and the logical siting of Xenophon's crossing (*An-*

basis, I.iv.11) and of Alexander's crossing (Arrian, *Anabasis*, III.vii.1; VII.xix.3) of the Euphrates. Despite a firm denial by Sarre and Herzfeld, who offered another site, Tell al Thadayain, west of Sura, the minority view has survived in a number of modern reference works and atlases.

The stratigraphic evidence mentioned above is sufficient finally to dispose of Dibsi Faraj as a possible location for Thapsacus, of which the site must show active occupation throughout the Hellenistic period.⁴

² F. Sarre and E. Herzfeld, *op. cit.*, 142–48. Modern works: e.g., M. Grant, *Ancient History Atlas* (London, 1971), and A. H. M. Jones, *The Cities of the Eastern Roman Provinces*, 2nd ed. (Oxford, 1971). Location of Thapsacus at Dibsi Faraj on maps in both these works probably depends on the unfortunate summary in the otherwise excellent article by E. Honigmann (*loc. cit.*), who advised acceptance of a Dibsi plateau location for Thapsacus in the absence of further archaeological work, and failed to correlate newly introduced evidence from the canal of Maslama with other evidence for the site of "Qasrin," quoted in the *RE* articles "Neokaisareia (3)" and "Syria" (*RE*, IV A. 2, col. 1697). Further, it may be noted that Tell al Thadayain is also unproven as a site for Thapsacus and that Ptolemy not only placed it downstream of Sura, opposite Raqqa-Nicephorium, but also used that fact to mark the boundary on the Euphrates between Palmyrene and Arabia Deserta. Abandoning Ptolemy for Pliny, Professor George Mendenhall (in a private communication) has suggested as an alternative site for Thapsacus the citadel of Jebel Khaled, north of the great bend in the Euphrates. The good range of Hellenistic structures and material available there to cursory surface inspection indicate a site worthy of being known by name. A pre-Hellenistic history would be supplied by Tell Hadidi, nearby to the south. Other points in favor of Jebel Khaled are that it is one of the nearest points on the river to Beroea, the access route being by Manbij-Hierapolis, and, since it is situated on the south side of a range of hills through which the Euphrates forces a swift passage, that it is a suitable starting point for the navigation of the lower river. But does Pliny's text require Thapsacus to be located upstream of Sura? It concerns the course of the Euphrates and is sparsely worded (*NH*, V.xxi). A. H. M. Jones, *op. cit.* 442, notes that "Pliny's words are ungrammatical and nonsensical and perhaps corrupt": *at in Syria oppida Europum, Thapsacum quondam, nunc Amphiopolis, Arabes Scenitae. Ita fertur usque Suram locum, in quo conversus ad orientem relinquit Syriae Palmyrenas solitudines*.—"And in Syria [it passes the following] towns: Europus, the former Thap-

³ F. Sarre and E. Herzfeld, *Archäologische Reise im Euphrat- und Tigris-Gebiet*, I (Berlin, 1911); R. Mouterde and A. Poidebard, *Le limes de Chalcis. Organisation de la steppe en haute Syrie romaine, documents aériens et épigraphiques* (Paris, 1945), 155–57.

⁴ V. Chapot, *La frontière de l'Euphrate de Pompée à la conquête arabe* (Paris, 1907), 284 note 4. See also E. Honigmann, "Thapsakos," in *RE*, V A. 1, cols. 1272–80.

The question of the ancient nomenclature of Dibsi Faraj does not end with acceptance of Athis as the name of the Roman settlement. The main circuit of walls was constructed at the end of the third century together with the *principia* (fig. B). From this followed much new building in the town: streets, drains, houses, and extramural baths to the west. A lower town was surrounded with earthwork defenses. In the mid-fourth century the large citadel basilica was constructed; the extramural martyrium basilica was built in the first third of the fifth century, and a new northern extramural bath was paved with mosaic in the mid-fifth century. The walls were strengthened and renewed under Justinian, and other Early Byzantine work included the insertion of a bath suite in the *principia* and the remodeling of the northern extramural baths. All this work indicates an economically flourishing town in the Late Roman and Early Byzantine periods yet no source mentions Athis at this time. Especially remarkable is its absence from Procopius' *Buildings*. The relevant section is his account of work on the right bank of the Euphrates (II.ix). After the account of Halebiyeh-Zenobia, Hammam-Sura, and Resapha-Sergiopolis comes a list of smaller sites in Euphratesia (II.ix.10) starting with the chief town Balis-Barbalissus, Neocaesarea, Gaboulon, Pentacomia, Europus; then paragraphs on work at Hemerium, Hierapolis, Zeugma, and Neo-

sacus now Amphiolis, the Scenite Arabs. Thus, it continues to the place called Sura, where it bends to the east and leaves the Palmyrene deserts of Syria." As it stands this is misinformation. Sura is neither at the great bend to the east, which is at Barbalissus, nor is it on the eastern border of Palmyrene. Can the text be emended? *Suram locum* is awkward. To substitute *Barbalissum* would solve the problem of a site at the bend of the river, but worsen that of a site on the frontier. The substitution of *Thapsacum* and the deletion of *Thapsacum quondam, nunc Amphiolis* as a gloss (notwithstanding that Amphiolis may be near Europus) would reconcile the text with that of Ptolemy and misplace the bend in relation to modern topography, as indeed it is partially misplaced by Ptolemy. Jebel Khaled may be Ptolemy's "Gerrhe." No suitable site for Thapsacus downstream of Raqqa has been reported so far. There is need of much more fieldwork in the Euphrates valley.

caesarea. Of these we do not know the location of Neocaesarea, Pentacomia, and Hemerium. The first names are in logical geographic sequence, so too are Barbalissus, Jabbul-Gaboulon, and Cerablus-Europus. The final group is less satisfactory, with a return southward from Cerablus to Manbij-Hierapolis, then north again to Zeugma, and the tacking in of a repetition of Neocaesarea to what is almost certainly the account of Zeugma. Hemerium cannot at present be securely located. Pentacomia is perhaps an alternative name of the imperial estates at Eragiza whose center has been identified at Tell al-Hajj.⁵

Neocaesarea is sparsely known to us from other sources, principally Georgius Cyprius, 882, Καισάρεια, ἐνθα ἦν ἔξοπίς ὁ ἄγιος Σέργιος ("Caesarea, where St. Sergius was in exile"), and the *Patrum Nicenorum nomina*, which shows the attendance of a Bishop Paulus of Neocaesarea.⁶ Thus, we learn that Neocaesarea was located in the territory of St. Sergius' martyrdom, that is, ideally, between Resapha and Barbalissus, and that Christianity, governmentally fostered in this frontier area, flourished enough to send a bishop to Nicaea in A.D. 325, and should therefore have left traces of its practice in the fourth-century structures on the site.

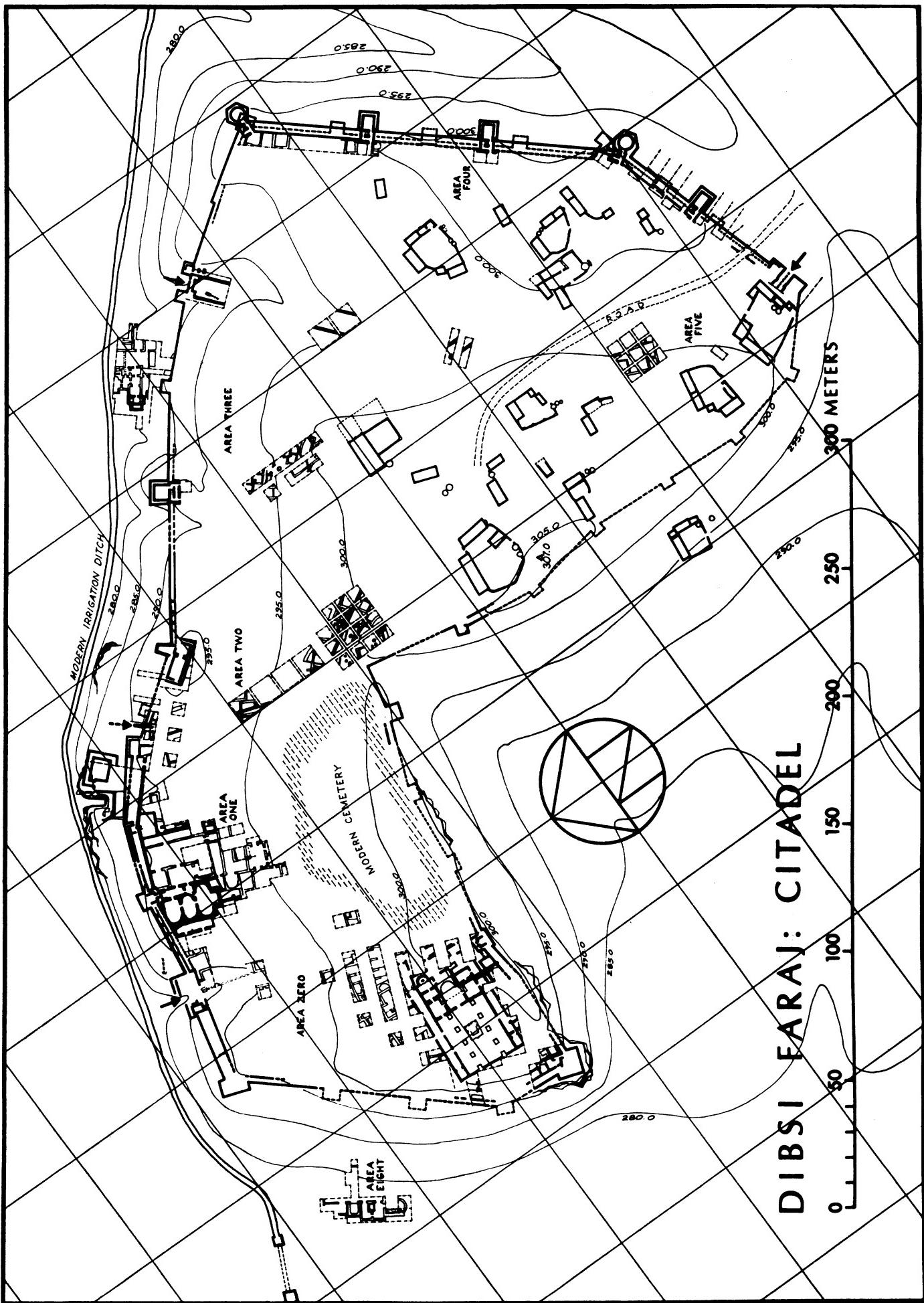
It will be seen from the foregoing that, while no single fact proves the point, there is much in favor of an identification of Neocaesarea with the Late Roman and Early Byzantine ruins at Dibsi Faraj. Early Islamic evidence described below seems to decide the matter. The name Neocaesarea itself is a fiction of imperial government, possibly applied to Athis when that village was fortified in the general reorganization of the Roman defenses against the Persians by the forces of Diocletian and Galerius. The fact that the place was not a new fort but rather a fort built round a pre-existing civilian nucleus made possible the rapid development of town life and culture. We know nothing of the unit in garrison at Neocaesarea beyond the single

⁵ R. Stucky, "Tell al-Hajj," in *Exposition des découvertes de la campagne internationale de sauvegarde des antiquités de l'Euphrate*, Musée National d'Alep (November 1974), 94–96.

⁶ For full references, see J. Sturm, "Neokaisarea (3)" in *RE*, 16, col. 2413.

DIBSI FARAJ: CITADEL

300 METERS



listing of the *Equites Mauri Illyricani* (*Not. Dig.Or.*, XXXIII.26), who were presumably the "Moorish cavalry" (Zosimus, I.iii.4) brought from the Balkans by Aurelian against Zenobia in A.D. 272. It is probable that in the course of time Dibsi Faraj and other similar fortifications came not to be used as permanent garrison towns, but retained facilities in which the field army could take up a defensive posture when necessary.

Despite its refortification Neocaesarea is not recorded as having played an important part in the Persian wars of the sixth century. No destruction on the site can be attributed with certainty to enemy action in that period. In A.D. 531 the Persians must have passed close by, and Belisarius in their wake. Procopius (*Wars*, I.xviii.8–14) unfortunately does not record the stages of the retreat between Gaboulon and Sura. In A.D. 540 Chosroes must have swept past from the sack of Sura to a parley point near Hierapolis. Procopius (*Wars*, II.v–vi) does not even tell us the fate of the much more important Barbalissus. Returning eastward Chosroes will have missed Neocaesarea as he crossed the Euphrates at Obbane near Barbalissus (Procopius, *op. cit.*, II.xii.4), perhaps at Tell Mureibet, till recently an important ferry near Meskene. Persian sources report that in the later Persian wars Adarnahan in A.D. 573 plundered the town of "Qasrin" (*supra*, note 6).

On the Byzantine retreat from Syria and the Arab advance, there is no event specifically connected with this region. Dibsi Faraj apparently passed relatively prosperously, but with reduced status, into Umayyad control. A major rebuilding of the citadel basilica seems not to have been carried through; indeed a grandiose L-shaped building was laid over the east end and south aisle in the Umayyad period. Other Early Islamic occupation was chiefly of the existing Early Byzantine buildings and fortifications. That Qasrin was the Early Islamic form of the name (Neo)caesarea is clear from the account of al-Baladuri (*Futuh as Sam*, 151), who recorded the building of a canal, the Nahr Maslama, by Maslama ibn Abdalmalik, Umayyad general and ruler of Mesopotamia from A.D. 709/10 to 718/19, which extended from Balis past Buwailis ("Little Balis"),

Qasrin, and Abidin to Siffin.⁷ This canal, of which only a small part has survived, is clearly the major work investigated by Tony Wilkinson and is described in his Appendix below, p. 337 (figs. F and G).

Considerable evidence of destruction during the Early Islamic period has been encountered on the site. This was caused presumably by the earthquake that destroyed Balis and much else in the region in A.D. 859. After that only limited occupation was resumed, in the debris of the public buildings and in the lee of the defenses. Undated, but perhaps to be associated with graves, one of which contained a green sgraffito plate in its shaft fill, was a heavy square structure resting in part on the already decayed south defense wall to the west of the citadel. Thus, it overlay also the Umayyad L-shaped building and its modifications. It is certainly the latest structure excavated on the site and may perhaps be assigned to the twelfth century. From then until modern times the site seems to have been deserted. It is possible that the corruption of the name Caesarea (Qasrin) survived in even more modified form, to be recorded as Qseyr el-Dibsi in the nineteenth century. Interest then turned on attempts to derive Dibsi, now thought to be a purely Beduin name, from Thapsacus, while the *Qseyr* or "tower" was referred to the brick remains of the major redoubt to the north of the defenses which stood until living memory.

DOMESTIC STRUCTURES

The nucleus of the village of Athis centered on the upper part of the eastern half of the later citadel. This nucleus was explored in two sets of trenches in areas two and three respectively (fig. B). The step trenches in area three yielded the greatest depth of occupation: successive stone buildings of Roman, Late Roman, and Early Byzantine periods, with later mud brick structures above (fig. 1a). The box system of trenches in area two yielded a similar sequence within less depth of deposit. Traces of the primary settlement were found at the eastern edge of the excavations of area zero and were cut through by the foundations of the *principia* building at the south edge of the excavation

⁷ Honigmann, *op. cit.*

of area one. On the west side early structures were found to have been cut by the construction of the citadel wall both at the east hexagonal tower and at the south gateway. While the Roman domestic structures were built in general of undressed limestone pieces, the Late Roman structures were of small, neatly dressed stone. In area zero to the north a rich house with its own private bath was found to conform to the line of the roadway running down to the northwest gate (fig. 8). Thus, the house can be dated to the early part of the fourth century, yet it was abandoned well before the term of its useful life due to the new decision in the middle of the century to build the large basilica and its precincts in the southwest corner of the citadel. In the Early Byzantine period the materials of construction varied between more or less well cut, small limestone masonry and mud brick with stone foundations. Fired brick seems to have been used only in the defenses and public buildings. Early Islamic buildings were largely constructed of reused materials removed from the early buildings and vary in quality from the L-shaped buildings of area zero, mentioned above, whose foundation was of large limestone blocks robbed from Late Roman public buildings levelled with fired tiles and with a superstructure of well made and well plastered mud brick (fig. 1b), to ramshackle hovels against the east citadel wall made of loose, robbed brick (fig. 2a). This latter form of construction reappears in modifications to the L-shaped building and in adaptations of the earlier public buildings to domestic occupation.

While the domestic structures may not be of great architectural merit, the occupation deposits within them have provided the bulk of the pottery and other small finds recorded in the excavations. Small find studies are not yet completed; so probable results can only be sketched here. Due allowance must be made for the preponderance of later deposits excavated; yet it is clear that, while there was always a vigorous local coarse pottery industry, a distinct decline in general activity occurred from the first to the third century followed by a great boost in the fourth and a fairly high level of economic activity which continued into the ninth. Beside the pink-grey coarse wares, the Brittle cooking

ware series provides a continuing indicator. Although this ware is well known on Iraqi and Syrian sites, the Dibsi Faraj excavation may be the first to demonstrate a millennium of development in it from the sharply defined rims of the Roman cooking pots to the early Abbasid casserole. Among the fine wares Black Gloss is scarcely present, Eastern sigillata are sparse with perhaps a preponderance of first-century A.D. forms, Roman and "Parthian" glazed wares are rare, as are the red-painted yellow imitations of sigillata wares. The fourth-century "fine" ware is a well made coarse dish with fine white slip sometimes decorated with stamps similar to those on third-century jars at Dura Europos. A few fragments of these jars have been found also. Among the Late Roman wares, African Red Slip and Late Roman "C" reached Dibsi Faraj in some quantity along with a smaller amount of Cypriot Red Slip, from the fifth to the seventh centuries. Among Early Islamic wares may be noted the thin cream and molded wares of Raqqa and an exclusively early range of glazed types. Fragments of glass types of the same date range were relatively plentiful and are of particular value in Late Roman and Early Byzantine contexts. Numismatic evidence for the whole site accords with this picture. A very few coins of the imperial centuries are followed by a noticeable presence of the tetrarchic coinage of the end of the third century. The Late Roman bronze coinage is well represented, especially in the House of Constantine issues; identifiable fifth-century coins are rare, though many illegible specimens must be of this date. Early Byzantine coins, fewer in number, are mostly Anastasius I and Justinian I, but range up to Heraclius, with a few later strays. The Early Islamic coins have not yet been studied, but one Islamic imitation of a Byzantine coin and a number of coins of the types of Hisham have been found.

THE DEFENSES

The primary defensive circuit, the "Diocletianic" wall, which was found to underlie or to be at the core of the "Justinianic" walls, follows an irregular course round the top of the most defensible slopes of the limestone outlier of Dibsi Faraj (fig. B). The

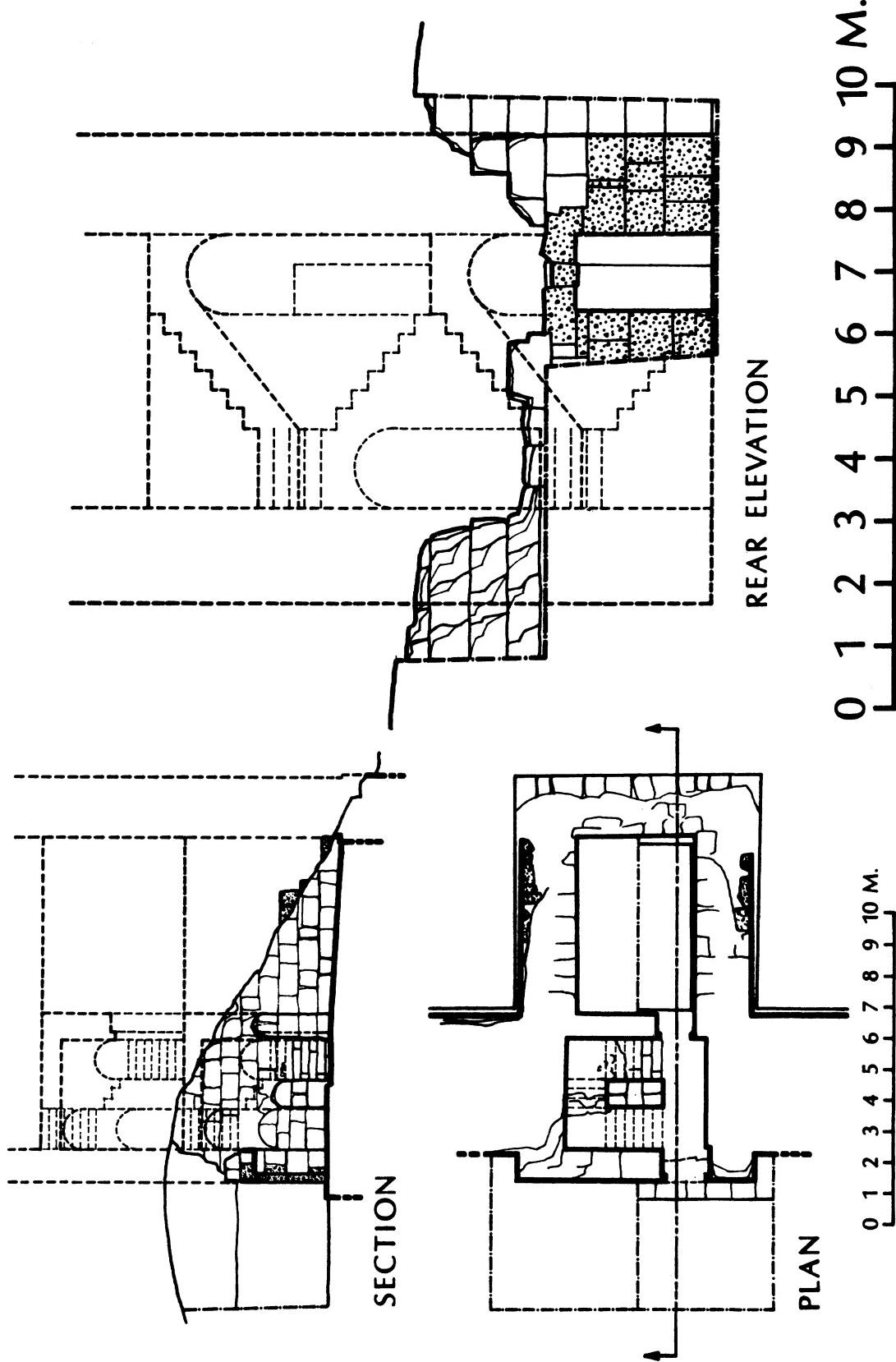
walls are deeply founded and wherever possible set into the natural limestone and built throughout of blocks of the same soft limestone. The towers were solid, roughly square, projecting forward from the curtain at relatively close intervals, *ca.* 30 m., with the corner towers set diamond-wise (fig. 2b). One interval tower preserves evidence of a rear access staircase. Traces of four corner towers and seventeen interval towers of this primary phase have been found, out of a probable total of thirty-four. This number includes the four excavated gateways, each protected by a pair of towers. The main gate was at the south corner, where a narrow neck of land is left between two wadis (fig. 3b). Three other gateways pierced the northern defenses, that in the center on relatively higher ground and those to east and west (fig. 4a) at the bottom of small wadis. The date of construction of this *enceinte* is hard to fix exactly in view of the later alterations, but in two places in early contexts by the wall collections of coins of the Diocletianic tetrarchy dating immediately before the currency reform of A.D. 294 were found. The historic occasion for the defensive work would be the strengthening of the frontier with Persia after Galerius' defeat in ambush near Raqqa-Callinicum in A.D. 297. The interval towers of this fortification are well paralleled in the inner circuit of walls at Palmyra which Professor Denis Van Berchem has dated persuasively to the period of Diocletian.⁸

The repair of the Diocletianic walls became necessary through the severe erosion of the blocks of soft limestone of which they were built throughout. To describe this repair and partial rebuilding as "Justinianic" is to depend more on probabilities than on stratigraphically demonstrable fact. The layout of the new walls takes into account the existence of the northern extramural bath building, dated in its mosaic to A.D. 453. Rubbish deposits, which fell or were dumped over the walls, are mostly of Islamic materials; such as are Byzantine necessarily contain materials surviving from the earlier deposits

⁸ "Recherches sur la chronologie des enceintes de Syrie et de Mésopotamie," *Syria*, 31,3 (1954), 254–70; "Le premier rempart de Palmyre," *CRAI* (January–March 1970), 231–37.

on the site. The *principia* bath suite, built after the wall repair—perhaps immediately subsequent to it—was gutted and reoccupied in the Early Islamic period; so little Early Byzantine material remained in it. Thus, only a general Early Byzantine date can be assigned to this secondary work on first appraisal of the site evidence. Comparative material near at hand is more helpful. The towers of Halebiyah-Zenobia, undoubtedly Justinianic work, exactly match the Dibsi Faraj towers in plan if not in size. The banded masonry and brickwork of the Qasr ibn Wardan complex of A.D. 565 is mirrored in the alternating bands of hard, conglomerate limestone and brick used in the new work at Dibsi Faraj.

The major area of reconstruction was in the southeastern defenses. The wall face was entirely rebuilt with minor adjustments to the alignment. The Diocletianic towers were cut down to ground level and replaced with large towers of the new type, the diamond-set east and southeast corner towers by hexagonal towers with circular chambers and the interval towers by large rectangular towers placed at greater intervals (fig. 3a). Access to all towers was by means of a passage and stairs unit cut in the thickness of the primary wall. The system is typified in figure C, the internal tower next to the north from the southeast hexagonal tower. The gateways were somewhat modified. The solid towers of the main gate were encased in a new facing of conglomerate and brickwork (fig. 3b). Of the northern gateways, only that to the west was fully maintained in use, with massive rebuilding done in limestone. The thickened curtain wall between this gateway and the northwest corner tower was carried over an early rock-cut tomb on two conglomerate blind arches. The central gateway was suppressed and its towers replaced to the west by a very large freestanding redoubt of brick which served to protect the water supply shafts (Appendix, p. 337), and, to the east, by a small, irregular, brick tower in a minor reentrant angle of the curtain wall. The eastern gateway was reduced to a postern, with only the eastern gate tower maintained. West of this gateway a primary tower overlooking the extramural baths was suppressed, while the next western primary



C. A Justinianic Tower

tower was encapsulated by the new type of conglomerate and brick interval tower containing, exceptionally, a brick superstructure in the stairs unit. On the steeper slopes of the western and southern defenses it was deemed sufficient to repair the faces of both walls and towers.

An additional defensive work is distinguishable at Dibsi Faraj. This is a system of two banks and a ditch which separates an area southeast of the citadel from the steppe beyond as it runs in an arc from the main western wadi to the edge of the Euphrates upper bank at a point near the beginning of the surviving portion of the Nahr Maslama (figs. F and 14; also Appendix, p. 337). The area thus enclosed coincided largely with the main concentration of the modern village of Dibsi Faraj so that no suitable area was presented for excavation until 1974, when a small two-roomed building was excavated to the south (area six on fig. F) which contained successive mosaic floors of fourth- and sixth-century type. The defensive bank and ditch were sectioned in 1972. The limited evidence obtained indicated that the earthworks had been constructed in the fourth century, presumably to accommodate a population increased by the improved status of the town.

THE PRINCIPIA

A major building complex was excavated for four seasons in area one adjacent to the northern defenses to the east of the northwestern gateway (figs. B and 4a). Its primary phase, constructed of large limestone blocks similar to the defense wall blocks, is inextricably linked to the building of the Diocletianic curtain wall, which at this point alone consisted in a casemate. It must therefore be considered contemporary with the primary fortification and if not necessarily military in purpose, certainly governmental. In a Diocletianic fort it should not be expected that the headquarters building, *principia*, or commandant's house, *praetorium*, would follow the classic patterns of such buildings found in a fort of the imperial Roman army. However, sufficient of those patterns can be seen in this complex to suggest that the northeast part probably represents the *principia* and the southern part possibly some

rooms of the *praetorium* of the commander of the garrison.

The *principia* was entered from the east, from an open area beside the water distribution cistern, by a doorway, or perhaps two, into a north-south corridor nearly 3 m. wide and 22 m. long. The floor of the passage was tessellated, with a mosaic panel at the excavated doorway. The panel had been inscribed, but was worn and patched in antiquity; so the inscription is no longer legible. To the north of the passage was a latrine within the wall casemate, to the south was a double stairway leading up to the southern wing of the complex, with a further latrine between the flights. The western flight led directly from a large cross-hall west of the passage (fig. 4b). The cross-hall, 8.5 m. wide and 22 m. long, was paved in geometric mosaic panels with a tesselated edging. The two panels were 5.5 m. wide and of unequal length, 7.5 m. and 11 m., within a single border. The mosaics were heavily worn and only partially preserved. West of the cross-hall lay three interconnecting rooms, each with access from the cross-hall; all with geometric mosaic floors. These rooms were about 5.5 m. wide, the largest central one being 9 m. long, while the northern and southern were 5 m. and 5.5 m. long respectively. Here also the mosaics were worn and fragmentary (fig. 5a).

The southern part of the complex, possibly the *praetorium*, of which less has been excavated, consisted in a northern range of rooms, ending to the west in a small apsidal projection with partially preserved geometric mosaic (fig. 5b). South of this range more limestone block walls were partially traced under later phases of the building. A stone-paved courtyard to the west appeared to be an original feature. A further mosaic-floored room to the south of the courtyard was not fully investigated. It is not likely that the complex extended much farther south at this level, since the room last mentioned was covered with a steeply sloping overburden washed down from structures on the south side of the citadel.

The Early Byzantine work in the parts of the *principia* complex so far described was limited to some alterations of doorways in the *principia* proper and reflooring in the southern range. To the west, however, an

entirely new brick-built wing was added, in the form of a bath suite covering an area of some 500 square meters (fig. 4a). The main rooms were reached by doorways from the west rooms of the *principia* to a short, north-south passage behind the now blocked off and disused Diocletianic tower. To the south the passage led into a small square antechamber from which a passage led southwest into the large double apsed *caldarium* (fig. 6a). In the eastern apse of the *caldarium* were two baths, while to the south was a large hot-water tank. To the north a doorway led to a smaller, double-apsed *tepidarium*, beyond which lay a large, westerly-apsed *tepidarium*. From this northern *tepidarium* a doorway led back into the passageway. All three hot rooms were equipped with deep hypocaust systems, with heat provided by three furnaces under the westerly apses. A notable feature was the preservation at floor level in all three rooms of the box-flue tiles which provided the wall heating and smoke escape element of the hypocaust system. The floors had originally been covered and the walls clad in marble *opus sectile*. Only a few pieces of marble remained in the bath suite, since it had been robbed extensively in the Early Islamic period. In a tower of the southeastern defenses in an Early Islamic context a large depot of similar marble pieces was found. After the robbery the hypocaust had been filled with earth containing Early Islamic material, and some occupation was resumed until an intense fire occurred and the brick vaulting collapsed. Flanking the bath suite were service corridors at semi-basement level, that to the west served the three hypocaust furnaces, that to the south gave access to the hot-water furnace, and set along its northern side was a series of light, brick arches carrying the piped water supply from the main tank northeast of the *praetorium* complex. Building activity in this complex was completed by the total restructuring of the *praetorium* area east of the paved courtyard. This area was rebuilt as a tiled hall 9.5 m. × 6.5 m. which was flanked to the north and south by pairs of tiled rooms (fig. 6b). Secure dating evidence for this phase was not obtained, but comparison with similar work over the citadel basilica renders it likely that the tiled hall is of the Umayyad period.

THE PUBLIC BATHS

Together with the other civic amenities introduced at Dibsi Faraj in the fourth century, public baths were provided. These were situated extramurally, at a low level convenient for the easy supply of water. The fourth-century bath building was situated to the west of the citadel, and was partially excavated in 1973. The baths covered an area of about 600 square meters and were built throughout of limestone block masonry except where tile was used to resist burning in the hypocaust system, floors were tessellated and of relatively coarse geometric mosaic. The excavated portions consisted in an entrance hall to the north leading to a large hall or atrium to the east. South of the entrance were a cold plunge bath, a rectangular hot room with central bath, and a smaller hot room with an apse to the south over the furnace. The pottery fill of the plunge bath indicated that these baths were abandoned in the mid-fifth century.

The successive bath house stood outside the northeastern gate of the citadel (fig. 7a). Its construction is dated by an inscription in the mosaic floor of a doorway, which was blocked in reconstruction of the baths, to the 764th year of the Seleucid era (= A.D. 452/53). The baths were built, chiefly of brick, but with small limestone rubble included in some walls, on a flat area created by the cutting back of the bank of debris outside the citadel wall and the destruction of some small earlier buildings. Due to erosion and the presence of a small modern irrigation canal, the northern limits of the baths were not defined. They were entered by a vestibule at the east end, which had a latrine to the north and to the south a storeroom, and led to a *frigidarium* 5.5 m. wide and about 15 m. long. The partially preserved mosaic floor consisted of geometric panels and a large panel incorporating wild beasts disposed around a vase; a lion labelled Θουρος leaps upon a gazelle (fig. 7b), a stag stands alert, a wild goat runs, birds stand around the vase, and foliage fills the remainder. A further vestibule, with a scale pattern mosaic floor and water tanks to the north and south, led west to the suite of three hot rooms, that to the north with an easterly apse, the central one rectangular, the southerly one with an apse to the west. Later, per-

haps in the sixth century, the hot rooms were reconstructed to form an east-west suite. The two northerly rooms were abandoned and the apse of the southerly room was removed in the construction of a new *tepidarium* while a new *caldarium* was built farther west with bath alcoves to north and south and a hot water tank and furnace to the west. To the south a steep flight of stone steps gave access to a service room for stoking two hypocaust furnaces and draining the bath. Access to the hot rooms from the vestibule was now through the former southern water tank. The *frigidarium* was refloored with a coarse, white, tessellated pavement which included a medallion mosaic personification of 'Ὑγία (Hygiene). In the Early Islamic period the baths were put to other uses with partial re-flooring, new rough doorways, and excavation into the drain across the floor of the *frigidarium*.

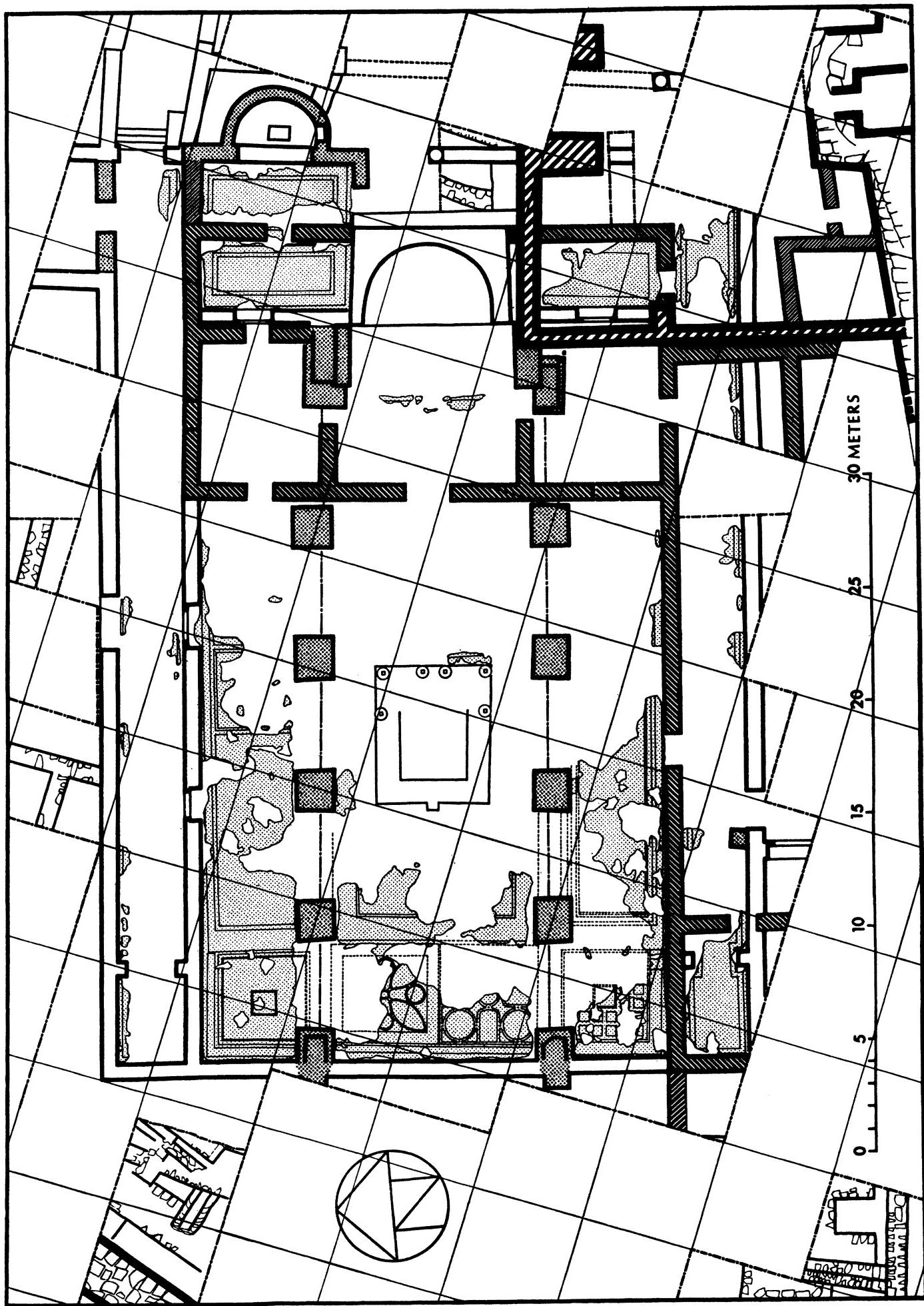
THE CITADEL BASILICA

Of the two Early Christian basilicas excavated at Dibsi Faraj, the earlier was located in the southwestern corner of the citadel (fig. 8). Figure D shows a preliminary and schematic plan of the series of buildings and phases in this area. Parts of the citadel wall are shown, in heaviest outline, to the northwest and south, with a Diocletianic tower to the southeast. Structures associated with the citadel wall, a drain and walls to the northwest, and with the street plan, to the north, are shown in light outline. Surviving traces of primary basilica walls are shown plain with heavy outline, while Early Byzantine alterations are shown dotted. Surviving mosaic is dotted and the main lines of panels and *emblemata* are indicated. The foundations of the Umayyad L-shaped building are shown in medium hatching, with some of the many later minor walls dependant on this building shown in close hatching. The late rectangular building to the southeast is shown in heavier outline with open hatching.

The size of the basilica, 41.5 m. long by 29.5 m. wide, including the corridors to north, south, and east, sets it immediately in the cathedral class of North Syrian basilicas. The five-aisled plan invites comparison with the relatively few known mid-fourth-century basilicas rather than with the standard North

Syrian, or more particularly Northeast Syrian, basilicas of the late fourth and fifth centuries described by Butler in his studies of standing church remains. Coin evidence from the northern foundation trench of a five meter stretch of the northernmost north passage wall provides a terminus post quem of A.D. 341. This by itself is not important, but it increases the likelihood that a limestone block bearing a dated inscription in relief, which was later incorporated in the foundation of the L-shaped Umayyad building over the south pastophory of the basilica, did in fact form part of the primary basilica construction. The relief roundel bore the inscription: .../έτους/λγχ—(the 657th [Seleucid] year)—A.D. 345/46. The sign for 50, Ν, is very damaged, but no other of the decimal signs, I through Ω, will fit the traces on the stone.

Due to the location of the basilica in the southwest corner of the citadel, access to it was necessarily from the east and north. Thus, a main entry, with steps, was found at the east end of the north corridor, while from this corridor two means of access were available to structures north of the basilica, which, though associated with it in orientation, remained imperfectly explored due to limited excavation time. The excavation carried out suggested that a large open courtyard lay west of a modest baptistry. The long narrow corridors were originally stone paved, and the west end of each was formed into a room by the projection of small stubs of wall. The nature of the division between the corridors and the aisles, whether solid or fenestrated wall or screen, could not be determined. Two openings were observed in the south wall of the north corridor, but the eastern part of it and the whole of the north wall of the south corridor were overlaid by the foundations of the L-shaped building. There is no reason to doubt that the surviving wall core of the apse is original work, but the primary form of the terminal piers has been lost in the massive and irregular alterations of the Early Byzantine period. Similarly, all trace of the primary arcades has been lost except for their median line, which can be determined by reference to the surviving mosaic panels. The west walls of both pastophories could still be traced, since Umayyad walls lay to the west of them. The floor of the northern pastophory was



D. The Citadel Basilica

paved with two geometric carpet mosaics separated by a doorway panel (fig. 10a). The line of the divider, whether screen or wall, was overlain by an Umayyad wall. The south pastophory had mosaic only in its western part, south of the apse, and then only of a plain checkerboard motif. Also without mosaic was the area east of the apse which seems in the primary phase to have formed a passageway with the eastern halves of the pastophories linking the north and south corridors. The central sector may have opened to the east onto what was later to be a paved courtyard extending west as far as the apse wall. One central column base which survives on the foundations of the east wall of the basilica suggests this possibility. The main feature of the nave was the large rectangular exedra (fig. 9a). Traces of side and rear walls with an engaged pilaster in the center of the west face were found together with a slightly raised floor foundation. The east end of the exedra was marked by six round limestone blocks set into the floor and containing square post sockets, disposed to form four openings, two to the east and one each to north and south. The existence, if not the function, of the exedra in North Syrian early churches is becoming more widely known as an increasing number of churches are studied by archaeological excavation. All so far published have westerly apses, one other rectangular one has been reported privately as the church of A.D. 372 at Fafirtin in the Jebel Seman.

The apse mosaic and the mosaics of the east end of the nave have been destroyed, except for a few small patches of border, by wear and Early Islamic alterations. The state of preservation of the mosaics improves toward the west, with geometric panels in the aisles and a large geometric panel, accommodating the west end of the exedra, in the nave. The westernmost bay is relatively well preserved, though in parts severely burnt, and seems to have received special decorative treatment. There is no preserved evidence of a division or screen, but the impression is that there was a pseudo-narthex. In the south aisle the geometric panel is very richly detailed, while in the north aisle a central *emblema* of duck or partridge is surrounded by a scale pattern. In the outermost border, made up of octagons, names, perhaps of mo-

saic donors, are inscribed: Βαχχός Θουρουβός on the west side and Σεργίς, Μελετίς, and Παυλός on the north. The west bay of the nave is divided into two mosaic panels (fig. 9b). That to the north is purely geometric, with lentoid and circular compartments separated by a plain linked net. The southern panel has a more elaborate net with plain and twisted ropes separating a pattern of circular and subrectangular compartments. The one preserved subrectangular *emblema* contains a standing peacock with tail trailing. One circle contains feeding ducks, another a large quadruped lacking its head; smaller birds and foliage complete the design. There is no doubt that these mosaics must be associated with the primary phase of the basilica, but no stratigraphic or structural reason demands their association with the date A.D. 345/46. Some of the geometric motifs are so similar to those of the mosaics of the basilica of A.D. 429 (see *infra*) that they must have been laid by the same firm of mosaicists. Whether such a firm would have operated for over eighty years is a matter for speculation. The mosaic at Dibsi Faraj is clearly nearer in general spirit to that of Apamea than to that of Antioch. Indeed there is much in the mosaic of the church of Herbet Müqa,⁹ dated (Seleucid 706) A.D. 394/95 by its inscription, that recalls the decorative scheme of the citadel basilica, though the work at Herbet Müqa is somewhat coarser. In view of the distance of Dibsi Faraj from Apamea and of the number of unexplored major sites lying nearer at hand, it would be premature to insist on this or on any other close connection.

A major alteration to the furnishing of the primary basilica was the addition of mosaic floors in the north and south corridors which had previously been stone flagged. Each corridor was treated as a single, long, thin panel

⁹ J. C. Balty, K. Chéhadé, W. Van Rengen, and others, *Mosaïques de l'église de Herbet Müqa* (Brussels, 1969). The inscription was published first by H. Seyrig in G. Tchalenko, *Villages antiques de la Syrie du Nord. Le Massif du Belus à l'époque romaine*, III (Paris, 1958), 36, no. 39a, where the Seleucid date was incorrectly rendered into the Christian era as A.D. 384/85. It has not subsequently been corrected in print, even by J. and L. Robert, "Bulletin épigraphique," *REG*, 72 (1959), 24, no. 459.

with a continuous border, in the south a quadruple plait, in the north "stacked champagne glasses." Within these borders a variety of groups of birds were depicted against a background of stylized florets. The best preserved section of this mosaic is in the west end chamber of the south corridor and contains a partridge to the west and three peahens placed in the center along a southern groundline (fig. 10b). Toward the eastern end of the south passage parts of three storks, one of them killing a snake, remain. In the north corridor, except for the crest of an unidentified bird at the east end, only traces of the border and floret infill have survived. Similar mosaic was continued in the "baptistry" area north of the north corridor. These mosaics were probably laid in the latter half of the fifth century.

It is possible that the basilica was destroyed as a result of one of the sixth-century Persian raids, but, for whatever reason, it was razed except for the apse to ground level and a new structure begun. At the east end the space east of the apse was included in the atrium, which was tiled over. The north pastophory was converted into a chapel by adding a brick apse with a tiled floor and a rough recess for a reliquary (fig. 10a). The arms of the basilica apse were extended by the erection of crude and unequal engaged piers. These had a simple molding at the base which was echoed in the engaged piers set into the west wall. The primary arcade was totally removed and trenches were cut through the mosaic floors (fig. 8). These trenches were filled with rubble and mortar to form a continuous foundation for arcades of four piers each. The rubble bases of these piers were set a few centimeters above the old mosaic floor. It seems probable that a new floor of mosaic or *opus sectile* was intended to be founded on the old floor and laid flush with the bases, and, further, that no part of the floor or superstructure of this secondary basilica was ever completed. Thus it was that the basilica site was available under Umayyad rule for redevelopment as the imposing L-shaped house. The former nave and aisles served as an open courtyard, the apse as an *iwan*, flanked by commodious rooms over the pastophories. The arrangement on the south side is less clear, but there was probably a long hall over the south corridor,

with other chambers to east and west and possibly more rooms to the south, filling the space up to the citadel wall. Certainly the area behind the west corner tower was intensively occupied in the Early Islamic period until destroyed by fire.

THE MARTYRIUM BASILICA

Situated outside the lower town defenses, to the east, was a quite different basilica (fig. F). Attention was drawn to its location when the initial survey group found mosaic tesserae and recovered part of a Roman military tombstone, which was subsequently found to have been reused as the base of the second pier of the north arcade of this basilica. Much of the site was occupied by houses and courtyards of modern Dibsi Faraj which remained in occupation until and during our fifth season so that excavation had to be done intermittently and could not be completed. The basilica thus revealed (fig. E), long and narrow with closely spaced arcades and pseudo-narthex, corresponds well with Butler's typical basilica of the fifth century in Northeast Syria. The overall dimensions were: length 51 m. and width 23.75 m. Internal dimensions of the nave were: length 38.5 m. and width 10 m.; of the aisles: length 39 m. and width 5.25 m. The arcades consisted of thirteen piers averaging 90 cms. square, joined by a mortared rubble foundation and with engaged responds 2.40 m. long to east and west, leaving interspaces of 1.60 m. average width. The apse was 7 m. wide and 6 m. deep and the pastophories were 5 m. deep, 6.5 m. wide to the north, and 7 m. wide to the south. The additional width of the south pastophory accommodated a stone sarcophagus laid in the northwest corner beside the apse (fig. 11). At the west end of the basilica two rectangular piers separated the nave from a narthex, 4.25 m. deep, entered by a single portal from the west. Chambers north and south of the narthex were separated from the aisles by blank walls and entered from the narthex. Throughout the construction of the basilica the materials used seem to have been of poor quality; the walls were for the most part of rubble, little now surviving above floor level. Where larger stone was used, it was found to have been used earlier for other purposes; for

example, the tombstone mentioned above and a millstone in the apse.

The basilica was surfaced throughout, except for the northwest and southwest service rooms, with geometric mosaic. This, too, though competent in technique, was cheaply laid with a minimum setting bed over the levelled natural gravel. Thus, the mosaics have suffered from some buckling and uneven wear, as well as from various disturbances caused by the collapse of the superstructure and by modern occupation. The mosaic scheme of the narthex is well preserved and consists of two carpet panels within a general border (fig. 12a). There is some damage near the west doorway where an inscription has been all but lost. The letters ΕΙϹ(?) suggest a religious text concerning the entry to the House of God. On the east side of the narthex, overlying the junction of the two carpet panels, a completely preserved inscribed panel conveys information about the construction of the building: "The work of the holy martyrium was completed by the energies of James the elder and of Paul the *periodites* in the month Xanthikos of the year 740"—March/April A.D. 429—and concludes with a prayer in abbreviated form. Mosaics on the south side of the nave, insofar as it was excavated, had been destroyed. The major part of the north side has been excavated and disclosed a scheme of pairs, probably six, of carpet mosaics (fig. 12b) proceeding up the nave, apparently uninterrupted by the presence of any exedra structure, unless this lay unusually far to the west where a village house precluded excavation. At the eastern margin of the sixth panel, and linking the

sites of the second arcade piers, a bare strip on the mosaic base indicated the site of the stone plinth of a screen. East of this a single large panel covered the area in front of the apse. The decorative scheme of the north aisle consisted in nine carpet mosaic panels of varying length (fig. 13a). The partially excavated and poorly preserved south aisle was probably very similar. In both aisles the westernmost panel seems to have been the richest (fig. 13b). All the arcade interspaces were provided with small mosaic panels of various design. The north pastophory was furnished with an elaborate carpet mosaic, while that of the south pastophory had a simple diamond pattern which probably extended over the top of the sarcophagus, although the relationship has been lost by a modern robbing pit in the area. Also lost to stone robbery is the detail of the apse piers and the nature of the link between the nave and apse mosaics; probably a stone step. The striking apse mosaic with its architectural representation of gabled columns set against a stylized floret background (fig. 11), together with the tiled remains of a presbyter bench, have been shown by excavation to be of secondary construction. In its first state the apse had no presbyter bench, but painted wall plaster continued down to the same level as the nave floor. In the quadrant of the apse that was excavated below the mosaic level a prepared floor surface was found, but there was no mosaic contemporary with those of the primary and principal construction of the basilica.

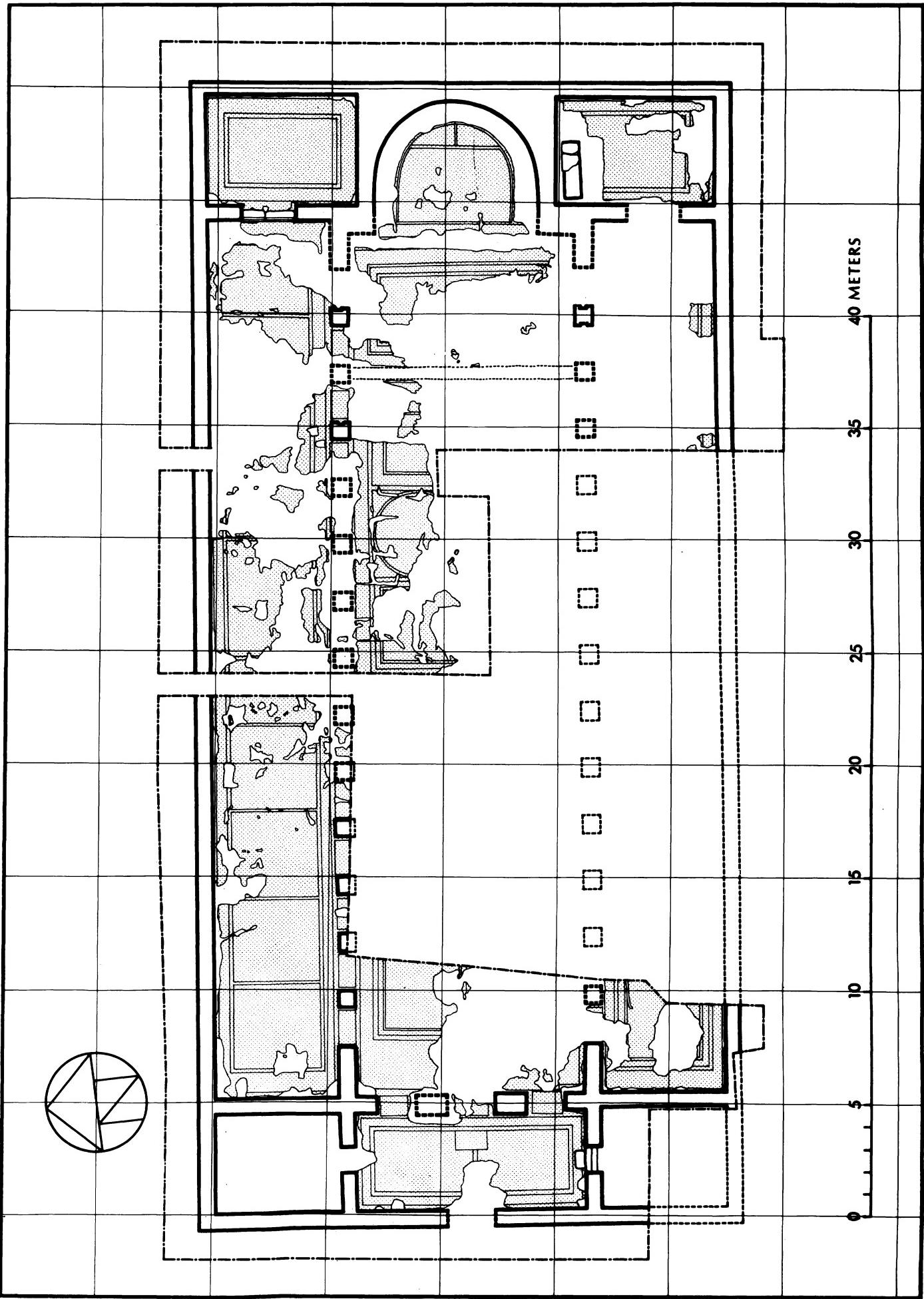
Richard P. Harper

APPENDIX

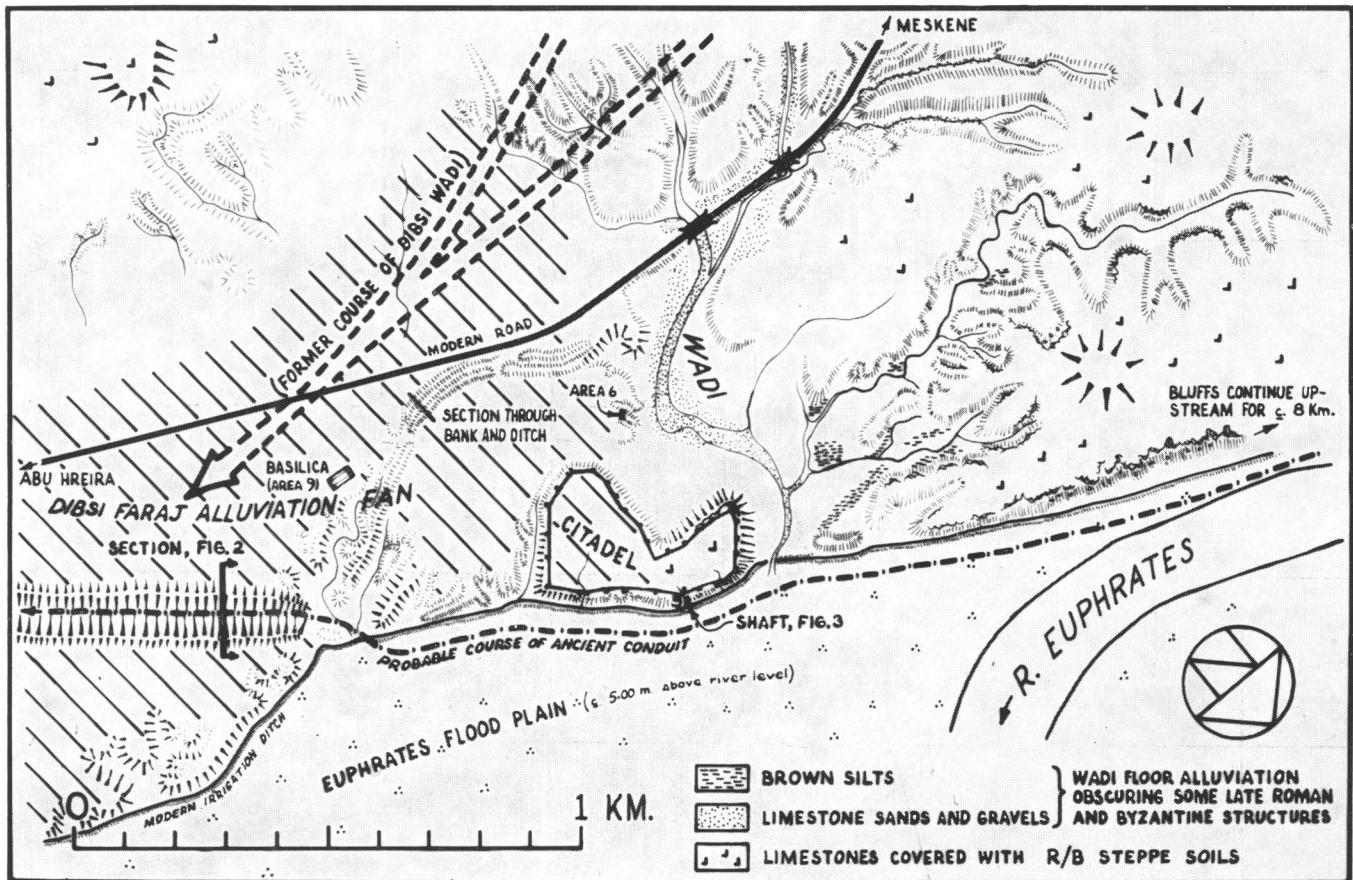
THE PHYSICAL ENVIRONMENT OF DIBSI FARAJ; A PRELIMINARY STUDY

Dibsi Faraj is situated some 20 km. downstream of the major bend in the Euphrates where prolonged erosion has cut an asymmetric valley 4–6 km. wide and 70 m. deep into the main Syrian steppe. Here the steppe land surface forms a plateau eroded in approximately horizontal beds of soft, white chalk-like limestone of Late Tertiary age, which in turn are capped by Early Quaternary conglomerates and Euphrates gravels. Between Dibsi

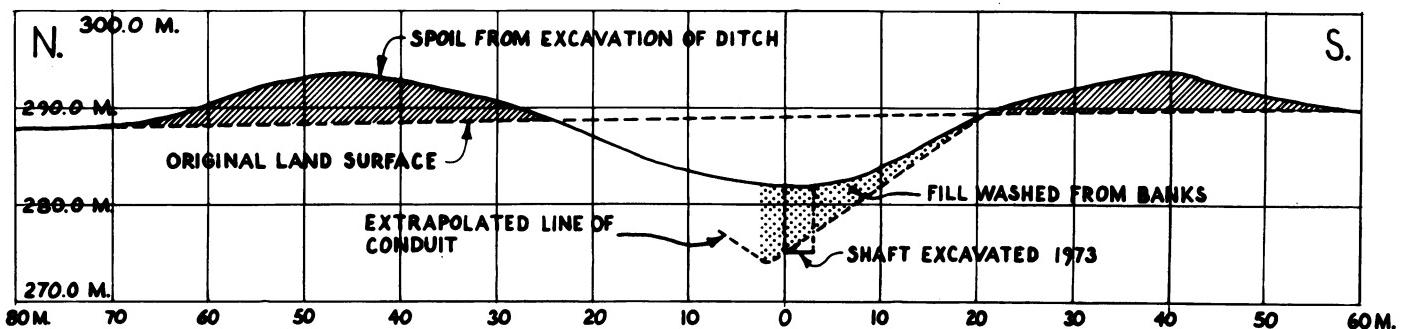
Faraj and Balis the southern side of the valley consists of steep limestone bluffs dissected by numerous small but deeply incised wadis. This contrasts with the gentle valley slopes of the northern side which are only slightly dissected by wadis. Geomorphological studies over two seasons, autumn 1972 and 1973, have shown that the flood plain has been constantly eroded and rebuilt in the vicinity of Dibsi and at least two cycles of erosion, with the river reaching its southern valley sides, have passed since Late Roman times. The



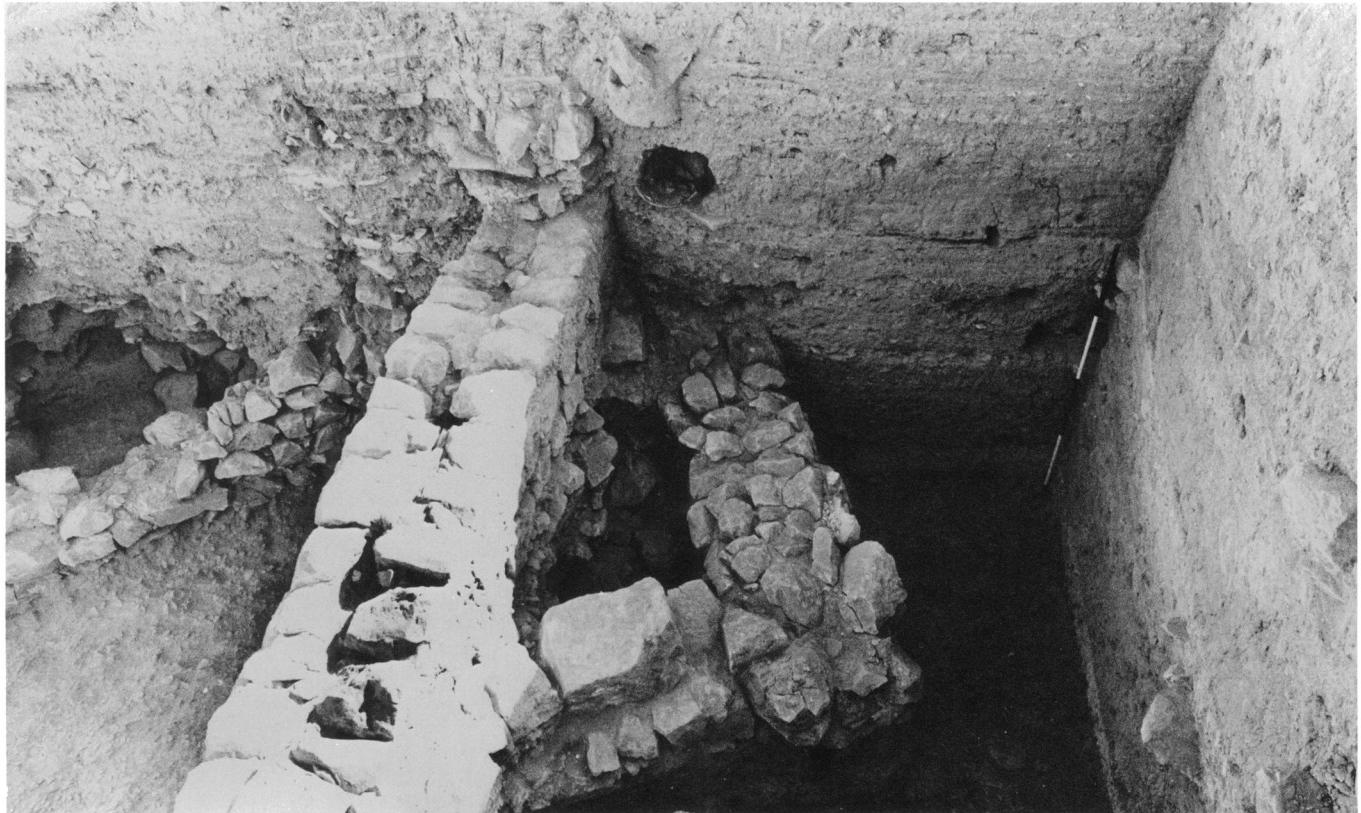
E. The Martyrium Basilica



F (Appendix fig. 1). Environs of Dibsi Faraj. A Sketch Plan with Topographic and Pedologic Data



G (Appendix fig. 2). Section of Nahr Maslama, Umayyad Canal



a. Area Three. Roman, Late Roman, and Early Byzantine Domestic Structures and Deposits



b. Area Zero. East Wing, Umayyad L-shaped Building

1. Northern Syria, Dibsi Faraj



2a. Area Four. Early Islamic Structures near Citadel Wall



2b. The Defenses, Southeast Corner Towers during Excavation

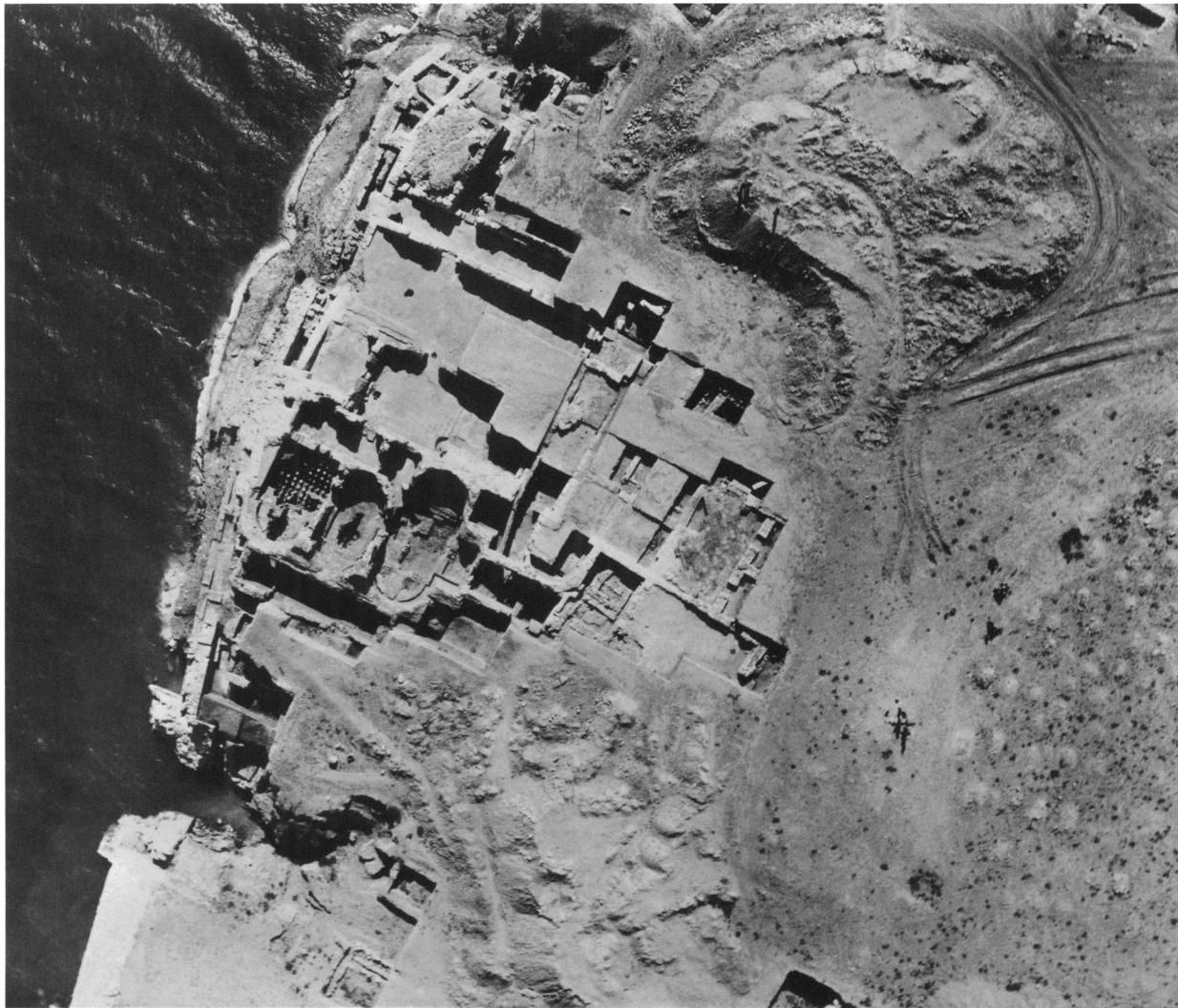


a. Southeast Hexagonal Justinianic Tower



b. South Gateway, showing Encapsulated Tower

3. The Defenses



a. Kite View (1974)



b. Cross-hall, from South

4. *Principia*



5a. *Principia*, Western Rooms



5b. *Praetorium*, Apsidal Room, Mosaic



6a. *Principia, Baths, Caldarium*, from Southwest



6b. *Praetorium, Umayyad (?) Tiled Hall*, from Northeast



a. Hot Rooms, from North



b. Frigidarium, Primary Mosaic, detail

7. Later Extramural Bath Building

8. Citadel Basilica, Kite View (1974)





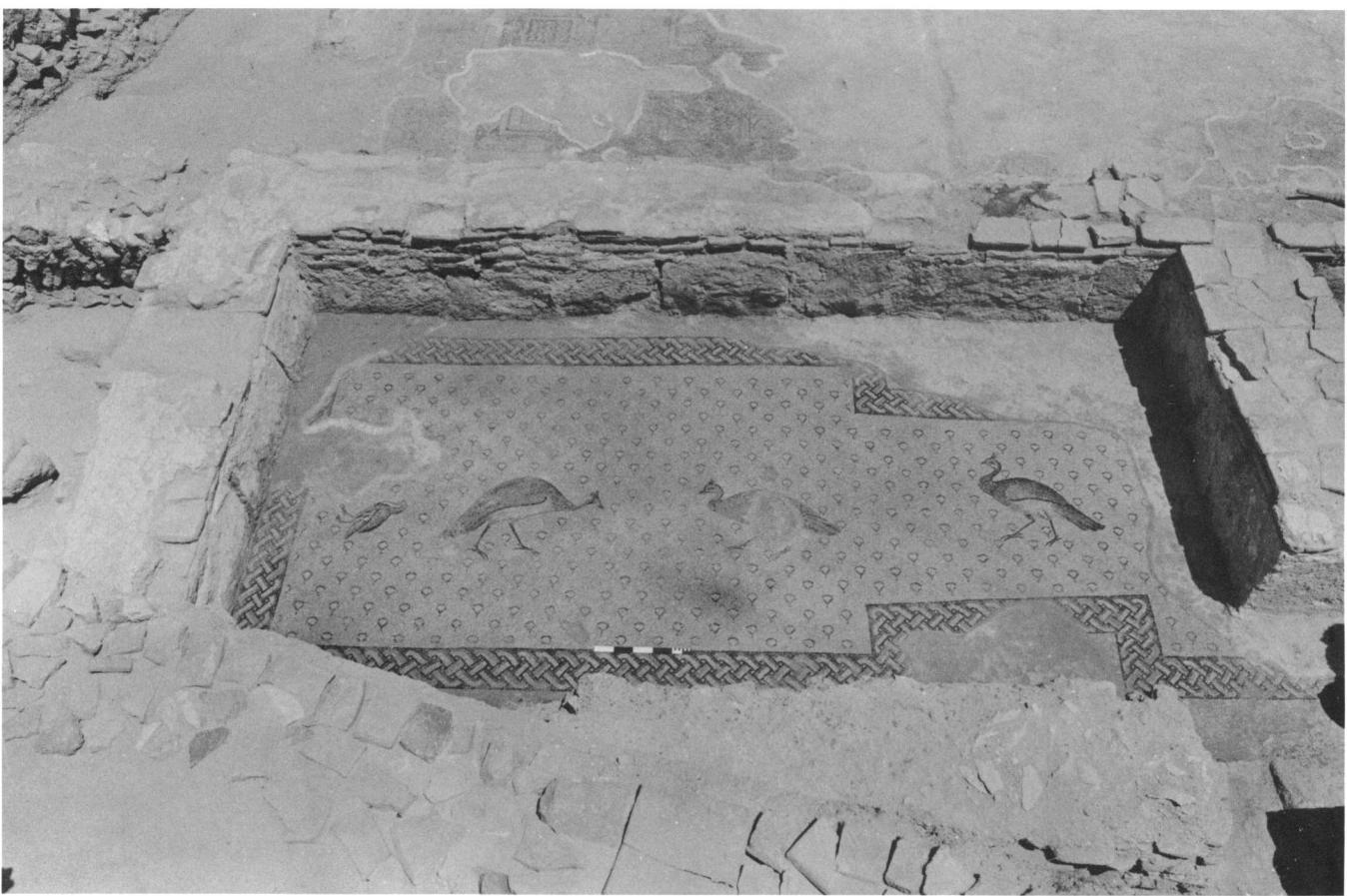
a. Exedra, from North



b. Nave, Western Mosaic Panels

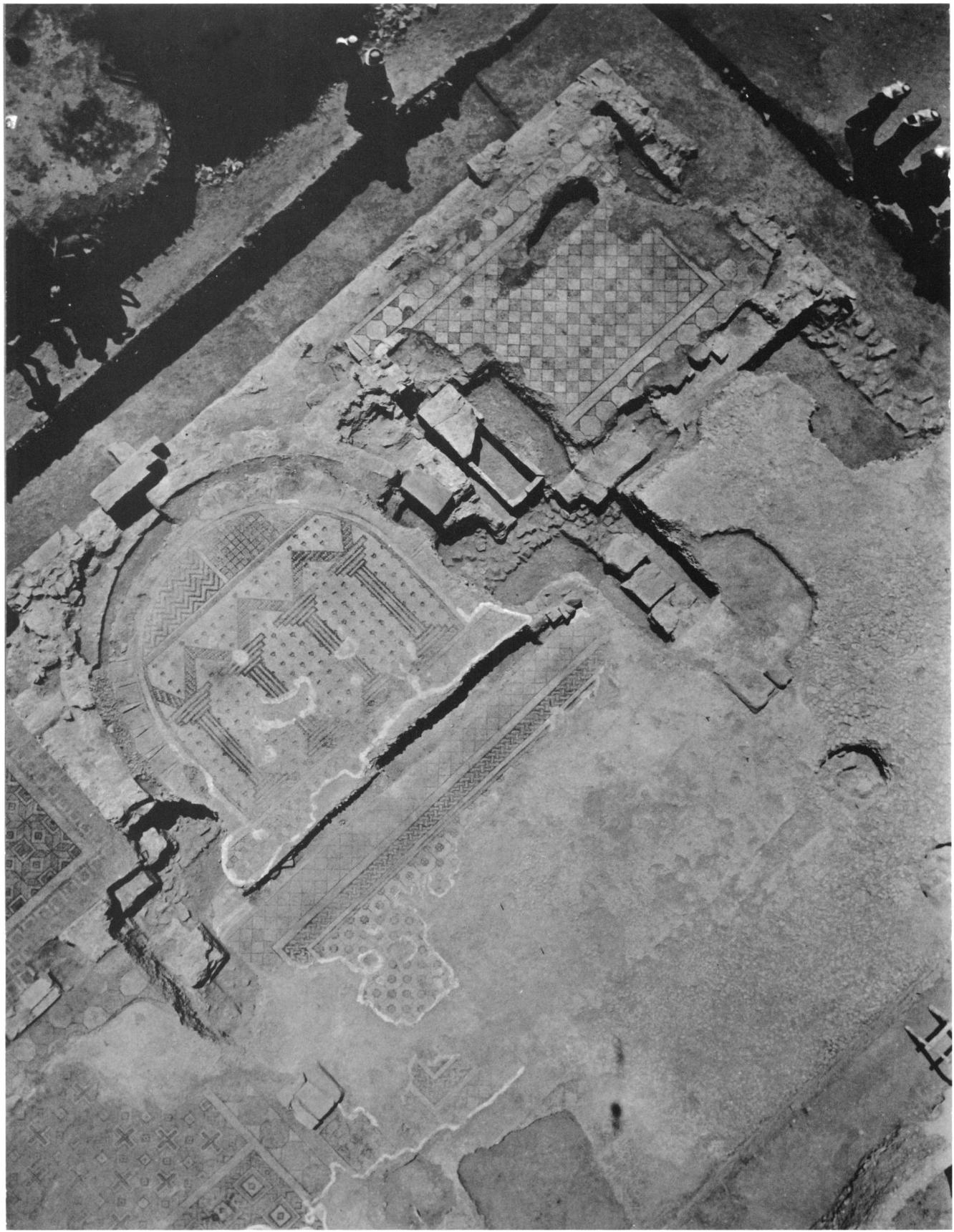


a. North Pastophory and Added Apse

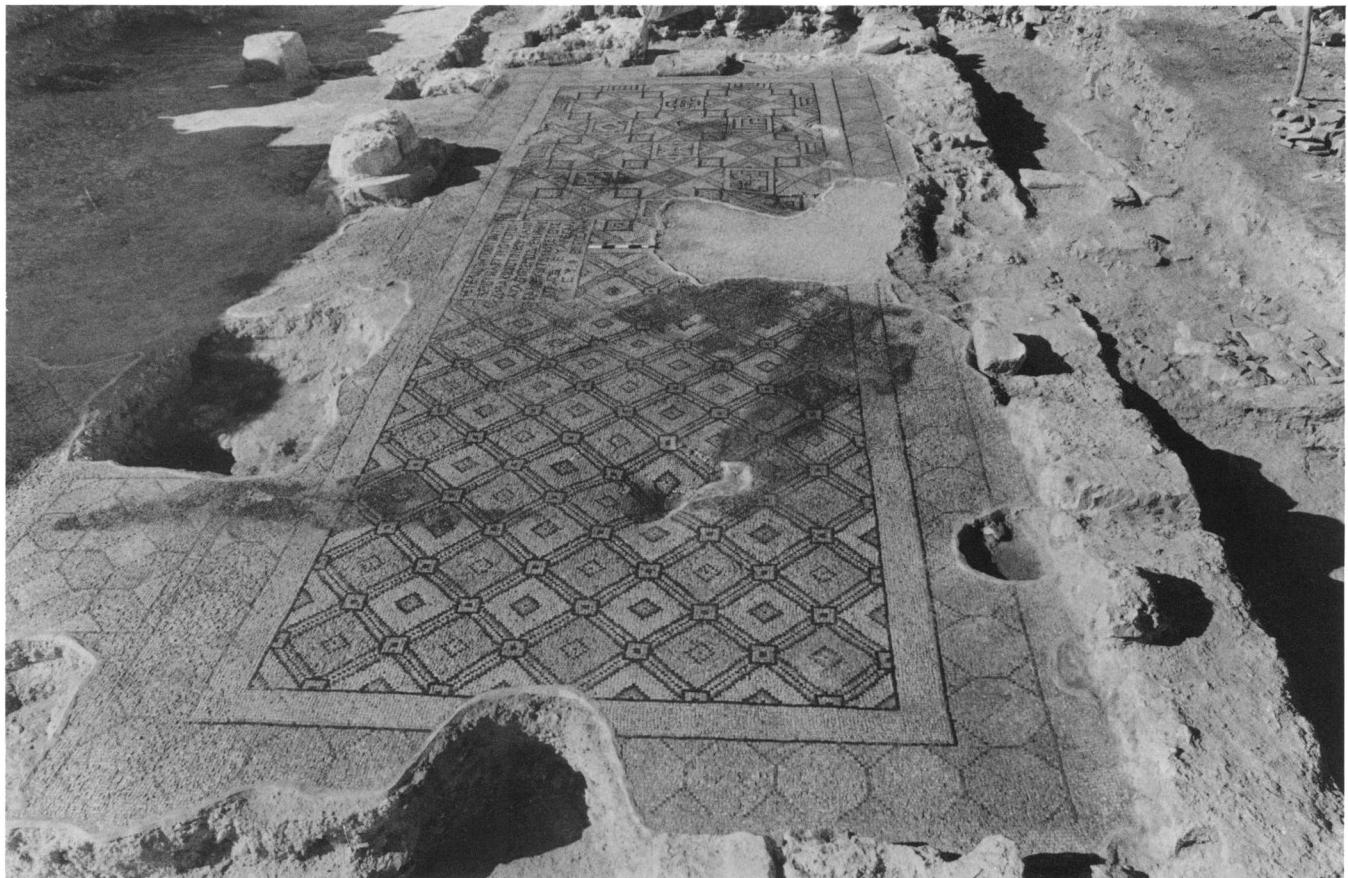


b. South Corridor, Mosaic. Peahens

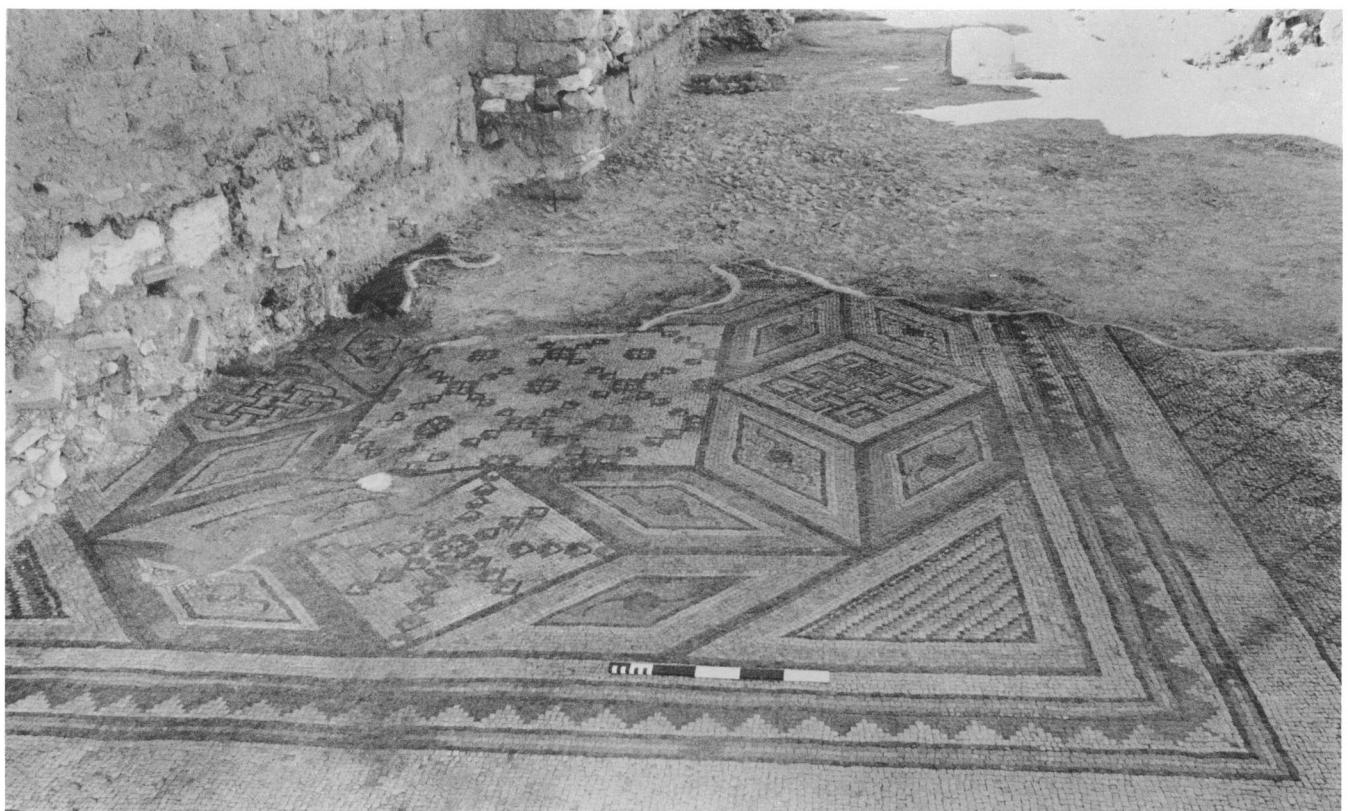
10. Citadel Basilica



11. Martyrium Basilica, Kite View (1972)

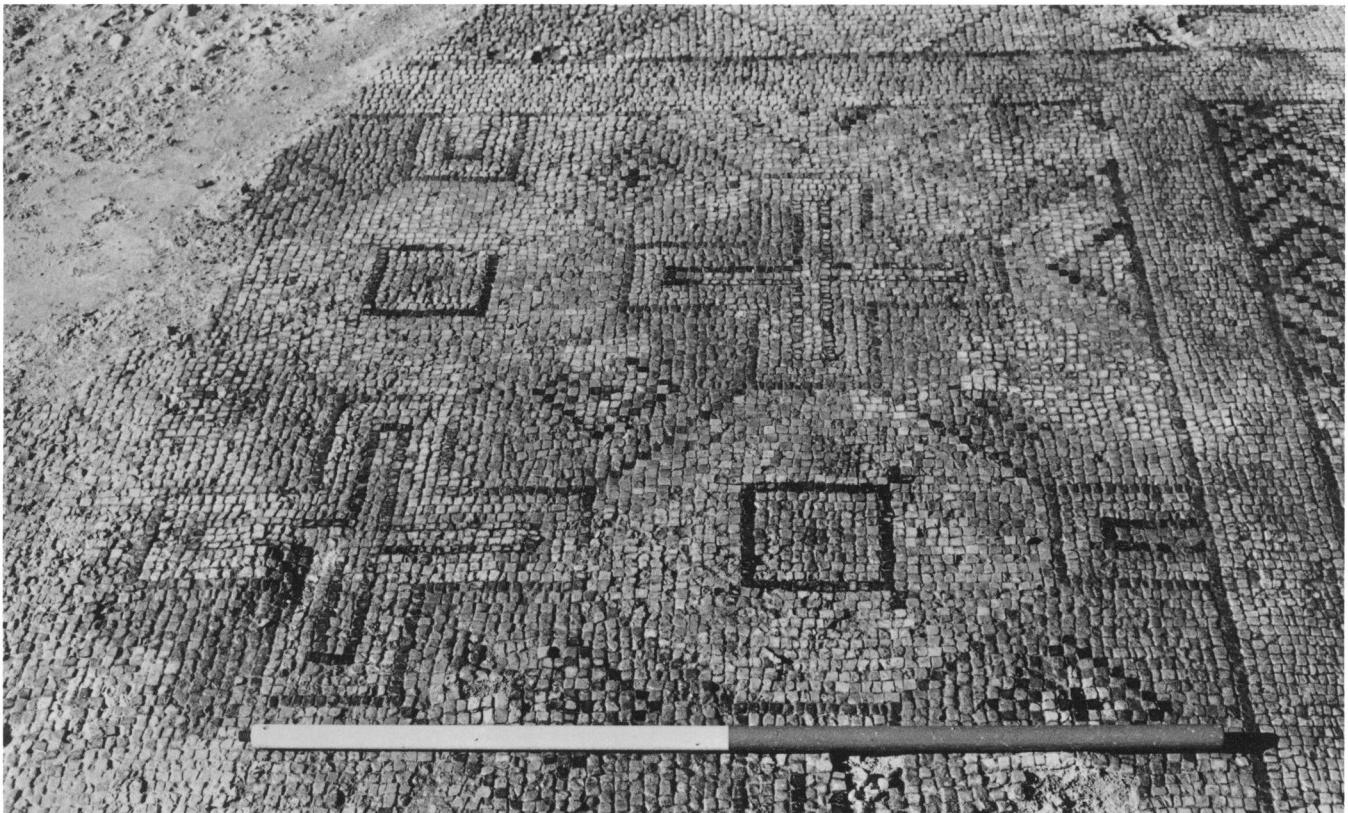


a. Narthex, from North



b. Nave, Mosaic, Northwest Corner Panel

12. Martyrium Basilica



a. North Aisle, Mosaic, detail



b. South Aisle, Mosaic, West Panel



14. Dibsi Faraj, from West, Kite View (1973)

position of the river for a given period cannot be stated, but, as its rate of erosion is rapid, it probably occupied many positions relative to the citadel in any particular century. In general the geomorphology of the valley sides shows that throughout the late glacial period and to the present day the river has tended to erode on its southern, more frequently than on its northern, side.

This bias in the fluvial activity has produced many good defensive sites within a short distance of the river. Dibsi Faraj is one of these, but here a slightly lower site has been provided by a change in wadi erosion during the valley evolution. Formerly a valley system draining from the plateau debouched in an extensive alluvial fan to the east of modern Dibsi Faraj (fig. F) and subsequently rapidly eroding wadis dissected the terrain from the north, causing the preexisting valley to be diverted northward (fig. 14). This isolated the low, but defensible, outlier upon which the citadel sits, whilst to the east and south the remains of the ancient fan provided space for the expansion of the extramural settlement. This site, which combined space to expand with accessibility to water supplies, must have appeared considerably more advantageous than the upstream defensive sites of Qalat Sheikh Hasan or Qalat Fer'gus, which possessed limited space for expansion and were high above water supplies.

In addition to the outer town to the southeast, extramural settlement occurred in the major wadi to the west of the citadel, where buildings remain obscured by a blanket of later wadi sediments. To the north, the only structures existing on the flood plain in modern times are the extramural baths outside the northeast gate, but it is through this area that the major canal, the Nahr Maslama, must have passed, and it is likely that this, as well as other structures, has been removed by the eroding Euphrates. The canal remained into modern times as a bank and ditch feature dissecting the ancient Dibsi alluvial fan from the east of the lower town to the flood plain some 3 km. downstream (fig. F). From this point no signs of it could be distinguished on the flood plain, but it reappeared downstream of Abu Hreira.

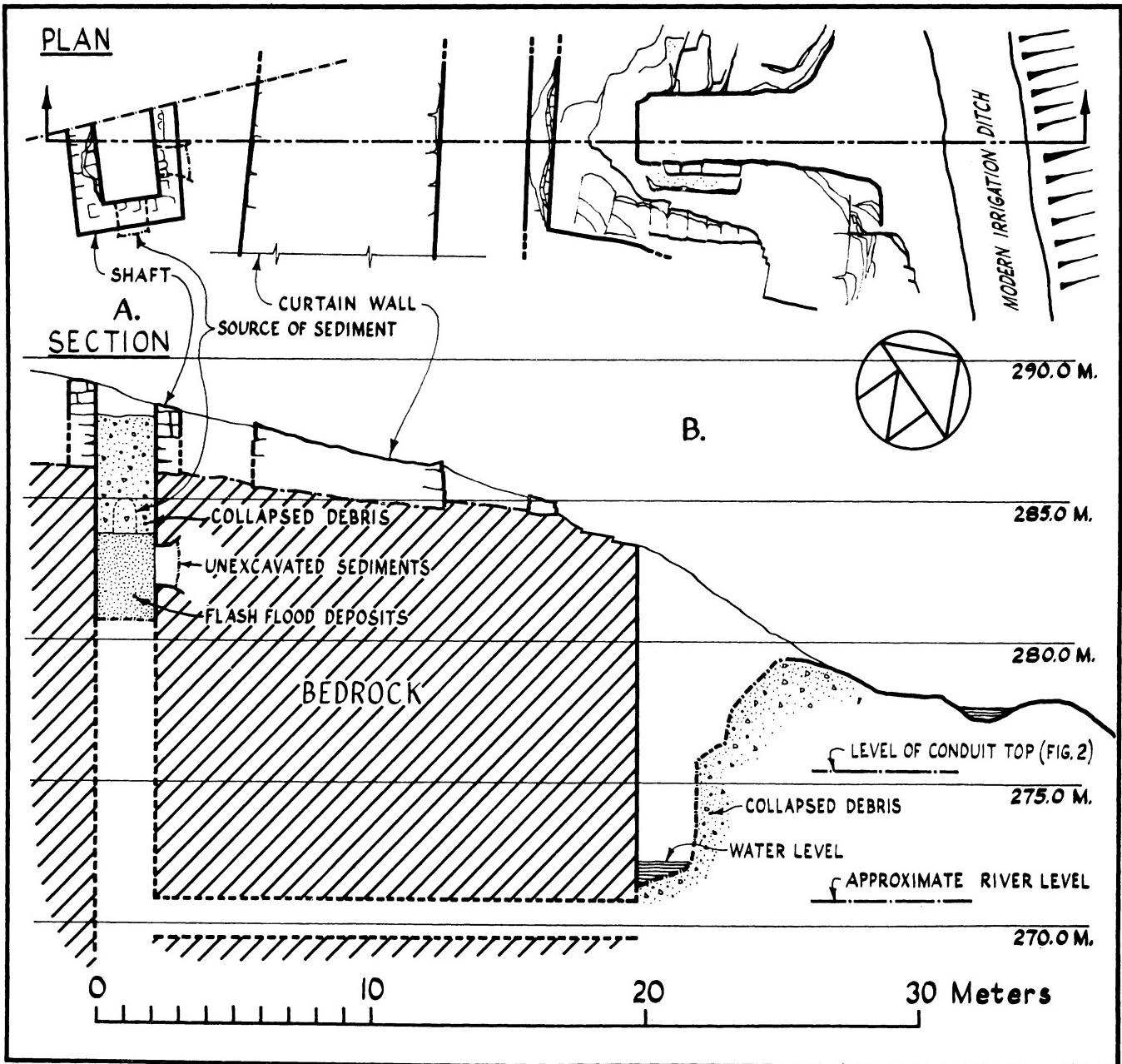
Excavations in the ditch floor penetrated through 7 m. of ditch fill to reveal in the base

a plaster lined conduit containing deposits of Euphrates sands and silts at around the height of the present flood plain surface. A reconstruction of the original feature is shown in figure G. Calculations showed that the channel must have extended formerly at least 8 km. upstream to intercept the river level. From this canal outlets could have been led to sustain villages and extensive areas of cultivated land both up and downstream of the Dibsi Faraj citadel.

Prior to this Umayyad canal another system, located along the north wall, in area one, must have been a primary or supplementary water supply. Here two shafts cut into the limestone bedrock were located on either side of the outer defensive walls. The outer shaft was excavated to beneath the ground-water surface of the flood plain, whilst the inner shaft could be excavated only to about 9 m. above this level. In the latter, interpretations of the geometry, structure, and texture of the contained sediments enabled a tentative reconstruction of the layout of the flanking chambers to be made. The reconstruction is shown in figure H. Provisionally the outer shaft is interpreted as a well which, penetrating into the flood plain gravel, could have supplied copious amounts of clean water via an underground tunnel to the internal shaft. Entry to this could then have been made from street level so that the water could be hauled up within the safety of the citadel walls.

Little positive evidence of early agriculture could be found on the steppe and ancient alluvial fans around Dibsi Faraj. It is likely that the bulk of cultivation was concentrated on the flood plain within two or three hours haul of the citadel. Remains of small settlements of Late Roman to Early Islamic date occur upstream at flood plain level and, judging by their eroded river-ward portions, these are probably the remains of more extensive settlements developed as agricultural villages on the flood plain margins.

Within the perimeter of the site, sediments were examined as an aid to stratigraphic interpretation. Many deposits postdated the main period of occupation; that is, they were deposits of urban decay. Due to the complex topography and the multitude of sediment sources deposits varied greatly. A zone of flash flood deposits, up to 2 m. thick, extends



H (Appendix fig. 3). The Area One Water Shafts

along the lowest, northern edge of the citadel (fig. 5). This flooding was probably a response to high runoff when large paved areas still existed within the citadel walls. Gradually, as decayed mud brick, refuse, and flash flood deposits accumulated, the area of impermeable surface probably decreased. Interception of rainfall then increased and consequently flash flood deposits became less common in the upper layers. When, after occupation ceased, interception reached a maximum a distinctive deposit of wind blown silts accumulated, eventually to blanket the entire site. Within the general picture, studies of

certain archeological sediments enabled the nature of the prevailing environment to be described, periods of stability and old ground surfaces to be distinguished, and certain architectural features to be traced more fully. Such work, as well as assistance in stratigraphic interpretation during excavation, has given a record of the sedimentological evidence of certain building phases and localized site environments which can be used to supplement that provided by architecture and pottery.

Tony J. Wilkinson